

8-3-00  
PP

**REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(a)**

In re Application of	
Application Number	
07-155943 Filed Feb 16-88	
Group Art Unit	Examiner

**Paper No.** \_\_\_\_\_

**Assistant Commissioner for Patents  
Washington, DC 20231**

I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE)

(A) referred to in United States Patent Number 5,284,931, column \_\_\_\_\_

(B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11, i.e.,  
Application No. \_\_\_\_\_, filed \_\_\_\_\_, on page \_\_\_\_\_ of  
paper number \_\_\_\_\_.

(C) an application that claims the benefit of the filing date of an application that is open to public  
inspection, i.e., Application No. \_\_\_\_\_, filed \_\_\_\_\_, or

(D) an application in which the applicant has filed an authorization to lay open the complete  
application to the public.

**Please direct any correspondence concerning this request to the following address:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Saefte See

8-3-00

Date \_\_\_\_\_

**Signature**

Typed or printed name

**FOR PTO USE ONLY**

Approved by:

**(Initials)**

## Unit

**Burden Hour Statement:** This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



US005284931A

## United States Patent [19]

Springer et al.

[11] Patent Number: 5,284,931  
 [45] Date of Patent: Feb. 8, 1994

## [54] INTERCELLULAR ADHESION MOLECULES, AND THEIR BINDING LIGANDS

[75] Inventors: Timothy A. Springer, Newton, Mass.; Robert Rothlein; Steven D. Martin, both of Danbury, Conn.; Michael L. Dustin, University City, Mo.

[73] Assignee: Dana Farber Cancer Institute, Boston, Mass.

[21] Appl. No.: 515,478

[22] Filed: Apr. 27, 1990

## Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 456,647, Dec. 22, 1989, which is a continuation-in-part of Ser. No. 45,963, May 4, 1987, which is a continuation-in-part of Ser. No. 115,798, Nov. 2, 1987, which is a continuation-in-part of Ser. No. 155,943, Feb. 16, 1988, which is a continuation-in-part of Ser. No. 189,812, May 3, 1988, which is a continuation-in-part of Ser. No. 250,446, Sep. 28, 1988, which is a continuation-in-part of Ser. No. 324,481, Mar. 16, 1989, which is a continuation-in-part of Ser. No. 373,882, Jun. 30, 1989, which is a continuation-in-part of Ser. No. 456,647, Dec. 22, 1989.

[51] Int. Cl. .... A61K 39/395

[52] U.S. Cl. .... 424/85.8; 530/388.22;

[53] 530/395; 530/808; 530/868; 514/8

[58] Field of Search .... 424/85.8, 85.91; 530/387, 389, 808, 388.22

[56] References Cited  
PUBLICATIONS

Cunningham C; et al., TIBTECH 10, Apr., 1992. "Anti-body engineering—how to be human." Daniel, J., et al., Curr. Opin. Immunol. 3:740-747 (1991), "Use of Monoclonal antibodies in human transplantation," Flavin, T., et al., Transpl. Proc. 23(1):533-534 (Feb. 1991) "Monoclonal antibodies against intercellular adhesion molecule 1 prolong carioige allograft survival in CY monoigous monkeys." Gibbs, W. W., Scientific American (Jul. 1993), "Try, try again," pp. 101-103.

Hams, W. J., et al. Tibtech 11 (Feb. 1993), pp. 42-44. "Therapeutic antibodies—the coming of age." Haug, C. E., et al., Transplantation 55:766-773, (Apr. 1993), "A Phase I trial of immunosuppression with anti-cam-12 (CD54) m Ab in renal allograft recipients."

Ortho Multicenter Transplant Study Group, New Engl. J. Med. 313:337-341 (Aug. 8, 1985). Physician's Desk Reference (1993), pp. 1702-1703. "Orthoclone OKT3".

Martin, S. D. et al. 1987. Cell 51: 813-819. "Purified Intercellular Adhesion Molecule-1 . . ."

Rothlein, R. et al. 1986. J. Immunol. 137:1270-1274. "A Human Intercellular Adhesion Molecule (ICAM-1) . . ."

Dustin, M. L. et al. 1986. J. Immunol. 137(1):245 "Induction by IL1 and Interferon- $\gamma$  . . ."

Cosimi et al., J. Immunol. 144(12):4604-4612 (1990).

Flavin et al., Transplant Proc. 23(1):553-554 (1991).

Tolkoff-Rubin et al., J. Amer. Soc. Nephrology 2(3):820 No. 2P (1991).

Kavanaugh et al., 56th Meeting of Amer. College of Rheumatology, Oct. 13-15, Atlanta, Ga. (1992).

Boyd et al., Proc. Natl. Acad. Sci. USA 85:3095-3099 (1988).

(List continued on next page.)

Primary Examiner—Christine M. Nucker  
 Assistant Examiner—Thomas Cunningham  
 Attorney, Agent, or Firm—Sterne, Kestler, Goldstein & Fox

## [57] ABSTRACT

Pharmaceutical compositions comprising antibodies to intercellular adhesion molecule-1 (ICAM-1 or CD54) are useful in methods of decreasing the severity of inflammation associated with the adhesion of leukocytes to cells bearing ICAM-1. Treatment with anti-ICAM-1 antibodies reduced the severity of inflammation associated with acute organ or tissue rejection and prolonged allograft survival time. Such compositions may optionally contain other immunosuppressive agents.

11 Claims, 23 Drawing Sheets